General

**Range & Accuracy**
Calculated sub-1% or better depth error across the entire operating range of 0.3m to 5m

**Operating Environment**
HiFi can be used in temperatures from -10°C to +45°C. HiFi can be customized for IP ratings.

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**Certifications (In Progress)**
- FCC
- CE
- Class 1 Laser Product

Weight: 300g

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Overview

Description
HiFi is a high-fidelity 3D sensor with advanced AI capabilities. It employs three high-resolution global shutter cameras for exceptional depth maps that can be merged with RGB data, and processed via a dedicated neural processing unit if desired. Dual laser dot projectors can add texture for low-feature scenes. USB-C and PoE are both included.

High-Res Depth
2.2 megapixel global shutter cameras; subpixel refinement provides 1.6 megapixel depth

AI-Enabled
Dedicated neural processing unit (NPU) with 8 TOPS of AI compute and 16Gb memory

Self-Calibrating
AutoCal maintains accurate extrinsic values for all onboard cameras

Dual Connectivity
Gigabit Ethernet with PoE, plus USB-C

Fusion Sync
GPIO port for sending or receiving a timing signal

Ultra-Wide FOV
156° DFOV lenses (all cameras), FOV-matched dual laser emitters

Specifications*

Infrared Sensor (x2)
- Model: ams Mira220
- Array Size: 1600 x 1400 px
- Pixel Size: 2.79 μm
- Shutter: Global
- Optical Format: 1/2.7”
- Max Frame Rate: 90 fps
- IR Sensitivity: Yes
- Stereo Baseline: 65mm

RGB Sensor (x1)
- Model: ams Mira220
- Array Size: 1600 x 1400 px
- Pixel Size: 2.79 μm
- Shutter: Global
- Optical Format: 1/2.7”
- Max Frame Rate: 90 fps

Lens (x3)
- Model: Arducam LN005
- FOV:
  - DFOV: 156°
  - VFOV: 101°
  - HFOV: 150°
- Material: Optical Acrylic
- Focal length: 2.1mm

Microprocessor
- Model: TI TDA441L
- Processor: 2x ARM Cortex A72
- Speed: 2 Ghz
- AI Compute: 8 TOPS
- CPU: 64-bit
- OS: Linux, RTOS
- Operating Temp: -40 to 105°C

IMU
- Model: LSM6DSMTR
- Max Data Rate: 6.4 kHz
- Max Sync Error: < 40 μs

IR Laser Projector (x2)
- Model: ams Belbago 1.1
- Type: VCSEL
- Wavelength: 940nm

Data/Power
- Ethernet: 1000BASE-T
- USB-C: 3.1, 10gbps
- Max Power: 15 watts
- Trigger: GPIO External

*All specifications subject to change.

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